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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,082	12/27/2000	Elmer W. Jensen JR.	147	3268

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EXAMINER

VAN DOREN, BETH

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,082

Applicant(s)

JENSEN ET AL. *S*

Examiner

Beth Van Doren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The following is a final office action in response to communications received 09/15/2004. Claims 1, 9-14, and 18-20 have been amended. Claims 1-20 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8-9, 11-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy et al. (U.S. 6,044,356).

3. As per claim 1, Murthy et al. teaches a system for manufacturing a tangible device, comprising: a seller's computer for receiving an order for the device from a customer, selecting manufacturing process commands to manufacture the device as ordered, verifying that selected site has the capability and an open schedule to manufacture the device as ordered, scheduling the manufacturing during the open schedule, and providing an order fulfillment schedule and tracking of the order (See column 1, lines 55-65, column 2, lines 50-67, column 7, lines 5-32, column 8, lines 40-65, and column 9, lines 1-20, wherein an order is received and manufacturing process commands are selected from choices and it is verified that the site has the capability to manufacture the device. The order is scheduled and tracked in the database),
a manufacturing control computer providing manufacturing process commands to a production unit at the site, the manufacturing control computer providing a site

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schedule and a record of maintenance fulfillment indicating capability and readiness of the production unit to manufacture device (See column 1, lines 15-30, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-35, and column 9, lines 1-20, wherein a site schedule and a record of the capability of the production unit is provided);

wherein the production unit at the site is adapted for manufacture of the device substantially without human intervention upon direction of the manufacturing process commands supplied by the manufacturing control computer (See at least column 6, lines 15-46, column 7, lines 5-25, column 8, lines 15-35, column 10, lines 55-65, column 11, lines 55-67, and column 12, lines 1-20, wherein the device is manufactured substantially by the machines).

However, Murthy et al. does not expressly disclose that the manufactured device is a chemical mechanical polishing pad for polishing a semiconductor substrate.

Murthy et al. discloses a manufacturing process in which the products produced have differing specifications to which the machines must change and adjust for production. Murthy et al. also discusses the expense of maintaining the complex machinery required to produce products of differing specifications. Chemical mechanical polishing pads were well known products in the art at the time of the invention that required different order specification to produce pads of varying width, groove specifications, etc. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the system of Murthy et al. which manufactures ordered products with differing specifications in order to decrease the expense on the customer by allowing the customer to order the product through the manufacturer rather

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than maintaining the machinery themselves. See at least column 1, lines 15-31. Examiner points out that Murthy et al. does not teach the limitation “polishing pads” in the subsequent dependant claims and this art and rationale applies in each of those instances.

11. As per claim 2, Murthy et al. teaches a system wherein the production unit comprises a machine for producing the device, the machine changeable for the specific ordered product (See at least column 1, lines 15-30 and 55-65, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, and column 8, lines 15-35, wherein a machine is used that is customizable to produce the specific product ordered). However, does not expressly disclose that the machine is a stereolithography forming machine.

Murthy et al. discloses a manufacturing process in which the products produced have differing specifications to which the machine must adjust for production. It was known in the art at the time of the invention that a stereolithography forming machine was used to produce polishing pads using 3-D model specifications, the specifications varying by product. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a stereolithography forming machine in the machines used by the manufacturers of Murthy et al. in producing products in order to more efficiently allocate resources through the consideration of the varying specification of products and the criteria associated with these varying specifications. See at least column 1, lines 1-30 and 55-65, and column 2, lines 13-30 and 45-63.

12. As per claim 3, Murthy et al. teaches a system wherein the production unit comprises a machine for producing a device, the machine changeable for the specific ordered product (See column 1, lines 15-30 and 55-65, column 2, lines 13-30 and 50-67,

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column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, and column 8, lines 15-35, wherein the machine is customizable to produce the specific product ordered). However, Murthy et al. does not expressly disclose that the machine is an inkjet printer adapted to deposit droplets of liquid phase polymer.

Murthy et al. discloses a manufacturing process in which the products produced have differing specifications to which the machine must change and adjust for production. It was known in the art at the time of the invention that an inkjet printer adapted to deposit droplets of liquid phase polymer was used to produce polishing pads with varying specifications. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include an adapted inkjet printer in the machines used by the manufacturers of Murthy et al. in producing products in order to more efficiently allocate resources through the consideration of the varying specification of products and the criteria associated with these varying specifications. See at least column 1, lines 1-30 and 55-65, and column 2, lines 13-30 and 45-63.

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4. As per claim 4, Murthy et al. teaches a system wherein the manufacturing control computer comprises a manufacturing processes processor storing and retrieving information from a manufacturing process data base, and adapted for use by the seller's computer to verify the property interest of the customer in the production unit (See at least column 1, lines 15-30, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-35, and column 9, lines 1-20, wherein information is retrieved and stored in a database and adapted to check the customer's interest in the production unit).

5. As per claim 5, Murthy et al. teaches a system wherein the manufacturing control computer comprises a supply chain fulfillment processor storing and retrieving information from a supply chain fulfillment data base and providing a record of supply chain managers and a supply chain fulfillment report indicating completion of a supply chain instructions and the readiness of the production unit (See at least column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-35, and column 9, lines 1-37, column 11, lines 30-45 and 55-67, and column 12, lines 1-6, wherein information is stored concerning fulfillment. Supply chain managers are known to the system. A report indicates the status of the supply chain).

6. As per claim 6, Murthy et al. teaches a system wherein the manufacturing control computer comprises a site schedule processor storing and retrieving information from a site schedule data base, and providing the seller's computer with maintenance schedule, a production schedule and an open schedule for the production unit (See at least column 1, lines 15-30 and 55-65, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-

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35, and column 9, lines 1-20, wherein the schedule for a site is stored and retrieved including scheduling information).

7. As per claim 8, Murthy et al. teaches wherein the production unit comprises a maintenance fulfillment processor storing and retrieving information from a maintenance fulfillment data base, and adapted to provide a record of maintenance fulfillment (See column 1, lines 15-30 and 55-65, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-35, and column 11, lines 30-55, wherein maintenance fulfillment (rework, changing the machine, machine repair) is recorded in a database and reported).

13. As per claim 9, Murthy et al. teaches a system wherein the seller's computer comprises a device attributes processor storing and retrieving information from a device attributes database and adapted to provide a user with numerous devices for selection by the user according to the device attributes (See at least column 1, lines 15-30, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, and column 11, lines 30-55, wherein devices are considered and selected based on attributes). However, Murthy et al. does not expressly disclose that the customer selects the devices.

Murthy et al. discusses that the user chooses the devices in the solution options and the solution chosen, with its associated plan and schedule, will have effects on the customer, such as delays, etc. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to allow the customer instead of the user to choose the devices in order to more efficiently meet the needs and requirements of the customers, thus increasing customer retention. See at least column 2, lines 50-67.

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8. Claims 11, 12, 15, 16, 18, and 19 recite equivalent limitations to claims 1, 2, 5, 6, 8, and 9, respectively, and are rejected using the same art and rationale applied above.

15. As per claim 13, Murthy et al. teaches a process wherein, the step of manufacturing the device substantially without human intervention further includes the step of using a machine for producing the device, the machine changeable for the specific ordered product (See column 1, lines 15-30 and 55-65, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, and column 8, lines 15-35, wherein a machine is used that is customizable to produce the specific product ordered). However, Murthy et al. does not expressly disclose that the machine uses successive molecular deposition onto an area pattern.

Murthy et al. discloses a manufacturing process in which the products produced have differing specifications to which the machine must change and adjust for production. It was known in the art at the time of the invention that using successive molecular deposition onto an area pattern was used to produce different objects with varying specifications. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include using successive molecular deposition onto an area pattern in the machines used by the manufacturers of Murthy et al. in producing products in order to more efficiently allocate resources through the consideration of the varying specification of products and the criteria associated with these varying specifications. See column 1, lines 1-30 and 55-65, and column 2, lines 13-30 and 45-63.

16. As per claim 14, Murthy et al. teaches a process further including the steps of verifying a property interest of the customer in the production unit, and apportioning according to the property interest of the user the income, depreciation, financial

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accounting adjustments, etc. (See column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-35, and column 9, lines 1-20, wherein information is retrieved and stored in a database and adapted to check the customer's interest in the production unit. See at least column 2, lines 13-30 and 50-67, and column 10, lines 1-30, which discloses the interest of the user and the apportioning according to the user's interest with respect to income, depreciation, financial accounting, etc.). However, Murthy et al. does not expressly disclose apportioning according to the property interest of the customer the income, interest, depreciation, taxes, insurance, and financial accounting adjustments.

Murthy et al. discusses the user making choices concerning the production plan, the solution chosen having an associated plan and schedule that effects the customer, such as production delays, etc. Income, interest, depreciation, taxes, insurance, and financial accounting adjustments were all known financial interests of a user at the time of the invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to allow the customer instead of the user to make choices based on his/her interests in order to more efficiently meet the needs and requirements of the customers, thus increasing customer retention. See column 2, lines 50-67.

17. Claims 7, 10, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy et al. (U.S. 6,044,356) in view of Johnson et al. (U.S. 6,067,525).

18. As per claim 7, Murthy et al. teaches wherein the manufacturing control comprises a production fulfillment processor storing and retrieving information from a

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production fulfillment data base (See column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-35, and column 9, lines 1-37, column 11, lines 30-45 and 55-67, and column 12, lines 1-6, wherein information is stored concerning fulfillment. See also column 1, lines 15-30, column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, which discloses the delaying of orders and maintaining status information, such as scheduling, capability and readiness, associated with the orders. However, Murthy et al. does not expressly disclose that the processor provides the customer with an order tracking and order fulfillment report.

Johnson et al. teaches a processor that provides a customer with an order tracking and order fulfillment report (See at least figures 5, 21D and E, column 5, lines 50-65, column 13, lines 35-65, column 17, lines 39-65, column 18, lines 10-20, which discusses reporting the order status).

Both Johnson et al. and Murthy et al. disclose systems that allow customers to order products and schedule the production of the order and financial aspects associated with a customer placing an order. Furthermore, both Johnson et al. and Murthy et al. discuss the potential for a change in schedule related to the order's processing (for example, Murthy et al. may delay an order). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include providing the customer a report of the status and fulfillment of the order of Murthy et al. in order to increase the consumer-friendliness of the system by providing customers with information about the order the customer placed with the user, thus increasing the retention of customers.

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19. As per claim 10, Murthy et al. teaches a system determining the property interest of the customer in the production unit (See column 2, lines 13-30 and 50-67, column 3, lines 5-21, column 4, lines 40-65, column 6, lines 15-35, column 7, lines 5-32 and 50-65, column 8, lines 15-35, and column 9, lines 1-20, wherein information is retrieved and stored in a database and adapted to check the customer's interest in the production unit. See at least column 10, lines 1-30, which discloses the interest of the user). However Murthy et al. does not expressly disclose that the seller's computer comprises a billing and payment processor and a billing and payment database verifying payment for the device ordered by the customer.

Johnson et al. discloses a billing and payment processor and a billing and payment database verifying payment for the device ordered by the customer at the seller's computer (See at least figures 5, 21D and E, column 14, lines 20-60, column 15, lines 5-30, column 17, lines 45-65, column 26, lines 1-30, wherein a billing and payment processor is disclosed after the customer places the order).

Both Johnson et al. and Murthy et al. disclose systems that allow customers to order products and schedule the production of the order and financial aspects associated with a customer placing an order. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a customer billing module in the system of Murthy et al. that allows customers to order products in order to more efficiently process the order by automatically receiving payment and verifying payment by the customer.

20. As per claims 17 and 20, claims 17 and 20 are process claims with equivalent limitations to claims 7 and 10, respectively. Therefore, claims 17 and 20 are rejected

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using the same art and rationale as applied in the rejection of claims 7 and 10, respectively.

Response to Arguments

#. Applicant's arguments with regards to the rejections based on Murthy et al. (U.S. 6,044,356) have been fully considered, but they are not persuasive. In the remarks, Applicant argues that (1) Murthy et al. discloses multiple manufacturers sharing information with each other to optimize the production of their products and does not teach a seller having the ability to interact with a customer by automating the ordering and manufacture of a polishing pad, or (2) Murthy et al. does not teach or suggest the manufacture of a polishing pad or a production unit manufacturing the pad without substantial human intervention.

In response to argument (1), Examiner respectfully disagrees. Examiner points that at least column 1, lines 15-30, column 6, lines 25-47, column 7, lines 1-20, column 10, lines 50-65, all discuss the customer of the system and figures 3 and 4 both discuss purchases, which discloses a customer interaction. Murthy et al. discloses a system that is operated to fill orders from customers. The computer-implemented system discloses a manufacturer manufacturing products for customers when the schedule permits as well as a first manufacturer trading orders with a second manufacturer, the first manufacturer serving as a "purchasing manufacturer" (or customer). In the second scenario, with a "purchasing manufacturer", there is still a customer on the end who is acquiring the product ordered from the first manufacturer and manufactured by the second manufacturer. Therefore, since the claim broadly recites "a seller's computer for

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receiving an order [...] from a customer”, any of these interpretations of the term customer meet the broadest reasonable interpretation of the limitation.

In response to argument (2) regarding a polishing pad, Examiner reminds Applicant that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Examiner points out that the current amendments merely changed the term “tangible device” to the term “polishing pad”, and the functionality of the claims remains the same (i.e. the methodology and system are the same regardless of whether it is performed for a polishing pad or a generic device). Therefore, the system of Murthy et al., which performs a manufacturing process where the products produced have differing specifications to which the machines must change and adjust for production, meets the functionality and system requirements of the claims. Examiner maintains that it would have been obvious to apply the method and system of Murthy et al. to the field of producing pads, as set forth above. Examiner suggests that if the Applicant intends for the claims to be specific to the polishing pad industry that he recite some specific functionality of how the use of the system in the polishing pad industry affects the ordering system claimed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

“Cabot MMB enters CMP Market” (Cabot Microelectronics Corp. Press Room) teaches the manufacture of the EPIC polishing pad.

“Strasbaugh Symphony-CMP” (www.strasbaugh.com) discloses high volume production in the CMP market.

DeJule (“CMP grows in sophistication”) teaches CMP systems in the semiconductor industry.

DeJule (“Advances in CMP”) discloses CMP systems in the semiconductor industry.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beth Van Doren whose telephone number is (703) 305-3882. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (703) 305-9643. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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November 15, 2004


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